

3/30/49.

100 mosaics of H168 on lactose streaked on LacEMB. If possible, one + and one - obtained from each. and tested on other sugars.

Almost all were Xyl - Mtl - and Gal = Lac. exceptions noted.

1-20. A ^{Lac} 20- 20- } 2- unpaired = A
B 18+ 18+

#15A is Xyl +/- ; Mtl +/- . streaks out to purify.
is Mtl +/-

21-40. A 20- 20- } 1 unpaired = A
B 19+ 19+

2A is Xyl +/- Mtl +/- ? Mtl +!

9A; 9B are Xyl + Mtl + (Conclation?)

41-60 A pairs 14- 14- } All X -
B pairs 14+ 14+ } M -
A 3- 3-
B 3+ 3+

61-80 A 16- 20- } 4 unpaired.
B 16+ 16+ } All X - M -

81-100 A 20- 20- } All X -
B 20+ 20+ } 1A Mtl + Xyl - TS^R

Hold all indicated exceptions.

All above tested on TS, but all appeared resistant. (probably n. 1, 4).

81-100 Retested on TS (on Ara EMB).

A. 15R 5S
(Lac-) B ↓
86, 89, 90, 92, 94 (Lac+)

B: All ²⁰ showed an S reaction (Vic type)
84 and 85 appeared to be mixed.
Streak these out.

[parentals in excess]

M168 Xyl selections.

4/2/49.

Mosaics picked from lac selection plates. Strained out on Xyl E⁻ M⁺ S.
100 streaked. Separable Xyl+/- in 27 tested first. 17 appeared
pure- (replaid \bar{c} additional mosaics). 56 re-purified to separate a +
and -. 49 separated; \approx 1 came pure + (pair \bar{c} - corresponding to it).
6 still too crowded.

	Xyl- selection				Xyl+ selection			
	Xyl	lac	Gal	M ⁺	X	L	S	M ⁺
1	-	-	-	-	+	-	-	+
2	-	-	-	-	+	-	-	+
3	-	+	+	-	+	-	-	+
4	-	-	-	-	+	-	-	+
5	-	-	-	+	+	-	-	+
6	-	+	+	-	+	-	-	+
7	-	-	-	-	+	-	-	+
8	-	- (*)	-	-	+	-	-	+
9	-	-	-	-	+	-	-	+
10	-	+	+	-	+	-	-	+
11	-	-	-	-	+	-	-	+
12	-	-	-	+	+	-	-	+
13	-	+	+	-	+	-	-	+
14	-	+	+	-	+	-	-	+
15	-	+	+	-	+	-	-	+
16	-	+	+	-	+	-	-	+
17	-	-	-	-	+	-	-	+
18	-	+	+	-	+	-	-	+
19	-	-	-	-	+	-	-	+
20	-	-	-	-	+	-	-	+
21	-	+	+	-	+	-	-	+
22	-	+	+	-	+	-	-	+
23	-	+	-	-	+	-	-	+
24	-	+	+	-	+	-	-	+
25	-	+	+	-	+	-	-	+
26	-	+	+	-	+	-	-	+
27	-	+	+	-	+	-	-	+

lac: 12-15+.
almost all exceptional Xyl+ are lac+
Gal - lac almost completely linked
(2 c.o. / 54 tests)

tested on
our (taken
from LMB Xyl);

33	56	88
38	59	89
39	62	92
48	64	96
53	66	
54	71	1-27
	80	p.502
	85	

	Xyl+				Xyl-			
	Xyl	Lac	Gal	MHC	Xyl	Lac	Gal	MHC
78	+	-	-	-	-	+	+	-
29	+	-	-	-	-	+	+	-
30	+	-	-	-	-	-	-	-
31	+	-	-	-	-	-	-	-
32	+	-	-	-	-	-	-	-
33	+	-	-	-	-	+	+	-
34	+	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-
36	-	-	-	-	-	-	-	-
37	-	-	-	-	-	-	-	-
38	-	-	-	-	-	+	+	-
39	-	-	-	-	-	+	+	-
40	-	-	-	-	-	-	-	-
41	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-
43	-	-	-	-	-	-	-	-
44	-	-	-	-	-	-	-	-
45	-	-	-	-	-	-	-	-
46	-	-	-	-	-	-	-	-
47	-	-	-	-	-	-	-	-
48	-	-	-	-	-	-	-	-
49	-	-	-	-	-	-	-	-
50	-	-	-	-	-	+	+	-
51	-	-	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-
53	-	-	-	-	-	-	-	-
54	-	-	-	-	-	+	+	-
55	-	-	-	-	-	-	-	-

UD

11

24	71
25	93
27	97
29	5 98
32	57 100
35	68 111
36	72 141
37	73 142
46	75 144
47	81 151
49	83 169
50	84 178
52	87

85-92

35

94

99

143

170

174

179

195

93-98

99

100

3

82

131

145

155

177

76

115

xyl+

xyl-

	xyl	lac	gal	MHC		x	L	B	M
56	+	-	-	+		-	-	-	-
57							-	-	
58							+	+	
59							+	+	
60							+	+	
61							-	-	
62							-	-	
63							-	-	
64							+	+	
65							+	+	
66							+	+	
67							-	-	
68							+	+	
69							+	+	
70							+	+	
71							+	+	
72							-	-	
73							+	+	
74							+	+	
75							+	+	
76							-	-	
77							-	-	
78							-	-	
79							+	+	
80							+	+	
81							+	+	
82							+	+	
83							+	+	
84							-	-	
85	+	-	-	+		-	-	-	-
86	+	-	-	+		-	-	-	-
87	+	-	-	+		-	-	-	-
88	+	-	-	+		-	-	-	-
89	+	-	-	+		-	-	-	-
90	+	-	-	+		-	-	-	-
91	+	-	-	+		-	-	-	-
92	+	-	-	+		-	-	-	-
93	+	-	-	+		-	-	-	-
94							+	+	+
95							-	-	-
96							+	+	+
97							+	+	+
98							+	+	+
99	+	-	-	+		-	-	-	-
100	+	-	-	+		-	-	-	-

...117)

4/5/49.

22, 23, 12, 5, 83 showed unusual combinations:

Retest:

#22: Lac#Gal- (Xyl#).	Xyl#:	12 tested.	1 Lac-Gal-
			11 Lac#Gal#
	Xyl-:	24 tested	16 ##
			8 --

No reciprocals found. No other example of the unusual combination.

# 23: Lac# Gal-	Xyl#:	9 tested	1 ##
			8 --
	Xyl-:	16	13 ##
			3 --

#5 & 2: Xyl-Mtl#	Xyl-	1 Mtl#
		5 Mtl-
	Xyl#	6 Mtl#

#12 x5 Xyl-Mtl#	Xyl #	10 Mtl# + 2 MR+ Xyl+	Sum: 6 Mtl- 3 Mtl#
	Xyl-	4 Mtl-	
		1 Mtl#	
		2 mixed Mtl#,- : MR+ : Xyl+ MR- : Xyl-	

No clear Xyl# could be found. Xyl- 20 Mtl-.

The streaked sectors from which these colonies were taken were reexamined to determine the prevalence of these unusual types, and the possible occurrence of the reciprocals.

- a. Reciprocals were not found at all.
 - b. Recurrence of rare types was noted. (Total of 2/15 possibilities for Xyl-Mtl#).
- Therefore each mosaic colony does represent a limited sample. Size??

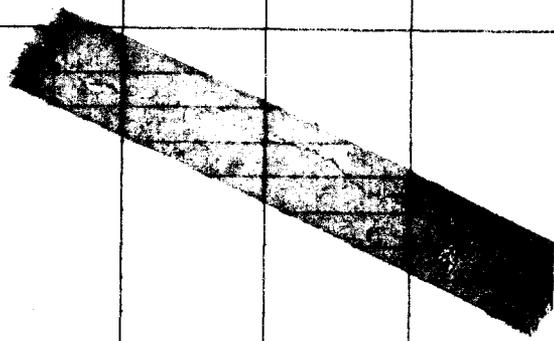
single

See page following 577

Map Xyl etc.

4/6/49.

58-161 x W677 on EMS:
 Lac, Xyl, Mtl, Mal.
 Use .1 ml 4x mixture / plate
 lac B₁, use .05 ml or
 dilution = .01 ml (D).



Cpunts:

Xyl EMS:

#	-
11	1
5	0
8	0
6	2
16	8
7	2
11	1
16	1
14	1

Mtl EMS:

#	-
0	54
3	27
2	17
0	14
1	18
<hr/>	
6	130

Mal EMS

#	-
2	17
5	13
3	19
2	45
<hr/>	
12	94

(sic)

94 17

Lac EMS

#	-
6	26
4	22
4	10
3	17
7	41
<hr/>	
24	116

Lac EMS B₁

#	-
22	129
23	96
27	113
32	111
57	196
15	98
33	128
<hr/>	
209	871

D:

9	26
21	41
12	31
10	27
16	21
<hr/>	
68	146

Mal EMS

+ picked.

	lac	Xyl	MH	Mal	Gal
1	+	-	-	+	-
2	-	-	-	+	-
3	+	+	+	+	+
4	-	-	-	+	-
5	-	-	-	+	-
6	-	-	-	+	-
7	-	+	+	+	-
8	-	+	-	+	-
9	-	+	-	+	-
10	-	-	-	+	-
11	-	-	-	+	-
12	-	-	-	+	-

MH EMS

+ picked.

1	-	+	+	-
2	-	+	+	-
3	-	+	+	+
4	-	+	+	+
5	-	-	+	-
6	+	+	+	-

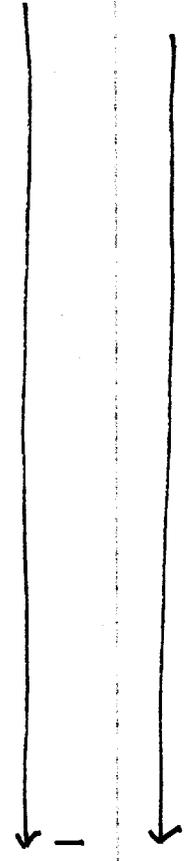
lec - Gal relationships.

Amarg	28 lact,	9 Gal+	; 21 Gal-					
Amarg	37 lact-	2 Gal+	35 Gal-					

Gal relationships.

	Lac B ₁ Verified lact.				26-50	Lac B ₁ Verified lact.			
	Gal	Mal	Xgl	Mfl		Gal	Mal	Xgl	Mfl
1	-	-	-	-		-	-	-	-
2	-	-	-	-		+	+	+	+
3	-	-	-	-		+	+	+	+
4	-	-	-	-		-	-	-	-
5	-	-	-	-		-	-	-	-
6	-	-	-	-		-	-	-	-
7	-	-	-	-		-	-	-	-
8	-	-	-	-		-	-	-	-
9	-	-	-	-		-	-	-	-
10	+	+	+	+		-	-	-	-
11	-	-	-	-		-	-	-	-
12	-	-	-	-		-	-	-	-
13	-	-	-	-		-	-	-	-
14	-	-	-	-		-	-	-	-
15	-	-	-	-		-	-	-	-
16	-	-	-	-		-	-	-	-
17	-	-	-	-		-	-	-	-
18	-	-	-	-		-	-	-	-
19	-	-	-	-		-	-	-	-
20	-	+	+	+		-	-	-	-
21	-	-	-	-		-	-	-	-
22	-	-	-	-		-	-	-	-
23	-	-	-	-		-	-	-	-
24	-	-	-	-		-	-	-	-
25	-	-	-	-		-	-	-	-

checked



LaCB, Verif. Lac+

	Lac	Mal	Xyl	MFL	76-100	Lac	Mal	Xyl	MFL
51	-	-	-	-		+	+	-	-
52	-	-	-	-		+	+	-	-
56	-	-	-	-		-	+	-	-
	-	-	-	-		-	-	-	-
	+	-	-	-		-	-	-	-
62	-	+	+	-		-	-	-	-
63	-	+	-	-		-	-	-	-
	-	-	-	-		-	+	-	-
	-	-	-	-		-	-	-	-
	-	-	-	-		-	-	-	-
72	-	-	-	-		-	-	-	-
72	-	-	-	-		-	+	-	-
73	+	-	+	+		-	+	-	-
74	+	-	-	-		-	-	-	-
75	-	-	-	-		-	-	-	-

Recheck

all opp. Lac+
 etc. #97.
 check again. ✓

Lac EMS B₁ Verif. Lact

126-150 all Lact

	Lac	Xyl	Mtl	Mal	Gal		Xyl	Mtl	Mal	Gal
101	+	-	-	-	+		-	-	-	-
2				-	+			-		
3				-	+			-		
4				+	+			-		
5				-	+			-		
6				-	+			-		
7				+	+			-		
8				-	+			+		
9					+			+		
10					+					
11					+					
12					+					
13					+					
14					+				+	
15					+				+	
16					+				+	
17					+				+	
18					+				+	
19					+				+	
20					+				+	
21					+				+	
22					+				+	
23					+				+	
24					+				+	
25					+				+	

Gal difficult to score.
probably interacting with B₁-

Summary.
58-161 x W677

505X

Xyl+ EMS:

	MHE	Mal	Gal	Lac
18	+	+	+	+
1	+	-	-	-
1	-	+	-	-

MHE+ EMS.

	Mal	Gal	Lac	Xyl
2	-	+	-	+
1	+	+	-	+
1	+	-	-	+
1	-	-	+	+
1	-	+	-	-

Mal+ EMS] MHE [Mal] Gal Lac Xyl

7	-			-		
1	+			-		+
2	-			-		+
1	+			+		+
1	-			+		-
5	+	+	+	+	+	+
15	-	-	-	+	+	-
1	-	+	-	+	+	+
3	-	+	-	+	+	-
2	-	+	+	+	+	+
2	+	-	+	+	+	+

Lac+ (EMS)

Lac- (EMS)

Lac+ (D₁)

37	-	-	-	-	-	-
1	+	-	-	-	-	+
1	-	-	-	-	-	+
2	+	+	+	+	+	+

Gal unascorbable & B₁-

<p>39</p>	<p>79</p>	<p>80</p>	<p>159 het 160 - (or het) 161 het 162 het</p>	<p>199 - all minus</p>	<p>49</p>	<p>99</p>	<p>100</p>	<p>200 het 201 het 202 het</p>	<p>all minus</p>
<p>pedigree sketch.</p> <p>streaked out on EMS Xyl, Lac X-18, 19, 19.5, 20. X-24, 25, 26.</p>				<p>both all are + and - on both media. No mosaic noted. X26 is pure Xyl - Lac - ^{do not mix HZ} others are mixture; no mosaic noted.</p>					
<p>2-159-60-61-62. -199-200-201-202</p>				<p>160 is stated to be ^{probably het?} pure - ? but contains a few Xyl + papillae. 199 is <u>pure</u> Xyl - Lac - ; others are mixed.</p>					
<p>Grow out on EMS to verify mosaicism.</p>									

Disinfection of λ .

4/6/49.

Irradiate Y87 stable UV7" (for Cohen's mutability program).

Pick 100 cols. and test for λ^- :

Retest:

- 5, 6, 7, 15, 18, 19
- 20, 24, 28, 32, 34
- 45, 52, 55, 60
- 61, 78, 79, ~~80~~, 100

} and renumber 1-20.

A.

4/9: All but 4 were either sterile or λ^+ on retest from cell suspensions.

Retest 1-4: all 4 λ^+ , p20^R λ^R

B

4/8. Irradiate W588 10"-20" on EM10 Lac.

20 colonies on 25" plate tested for sensitivity to p20.

All appeared more or less sensitive to p20. When tested on W518, 10 were λ^+ . This is not, therefore, a reliable criterion for λ^- .

Check other colonies directly on W518.

20" series: 37 tested none p20^S.

15" " 40 " " "

10" " 40 " " " (1 or 2 doubtful. Recheck: λ^+)

Apparent sensitivity may be partly an attenuation phenomenon.

4/8/49.

1+2: Dilute 518 and 811 10^{-7} . Plate .1 ml \bar{c} s .1 ml p20 stock.

Control \bar{c} p20.

Titrate p20 stock on 518.

Plate p20 on W811

Add .5 ml $\lambda 10^9$ to .5 ml W518 10^{-7} . Hold 10 mins. Then plate .2 ml \bar{c} p20 to ascertain $\lambda+$.

	-P20	+P20	+ λ	Titer p20: 10^{-7} : 253.
W518: 10^{-9}	24	0	0.	Selection for P20: 10^{-1} \bar{c} W811: 173 plaques noted. Occur with a frequency ca. 10^{-6}
W811: 10^{-8}	19	31		

\therefore P20 can be used to select for $\lambda+$. But 10 mins. contact of 518 \bar{c} λ does not protect it.

Also, cross streak λ , p20 \bar{c} :

1-4 purified 518/20 isolates

- 5. K-12
- 6. W811
- 7. W518
- 8. B.



Note: Bio resistant to P20. of B/ types.

p20. 6 plaques picked from above plated \bar{c} W811: heavy plating from each, which therefore represent bonafide mutants (cf. p19).

Replate single plaques. 3x on W811; once on B. Grow out on B. Inoculum from last plaque gave ca. same counts on W811, W518 + B. Essentially same plating efficiency is indicated.

p20L = p21.

4/9/49.

p21 = p20L described above as acting on $\lambda+$. [Not excluded that it may be a contaminant].

During titration of p20 on W518, a larger plaque with translucent halo was noted. This bred true when picked & plated.

Replate on W518; W811, to check identity and grow out on W518 p20 "r" buds true and is inactive on W811.

Material here for x (p20r x ~~W811~~).
p21

p20 tested \bar{c} B/ series.

B	S
B/1	S
B/1,5	S
B/2	S
B/3,4,7	S
B/6	R
B/89	S

Cross-reactions \bar{c} T6 noted.

T6 tested \bar{c} 518/20 4 tests all T6^R
W518 T6^S.

V₆^R is therefore related to resistance to p20, but not to T.

	p19B	p21
B	S	S
B/1	S	S
B/1,5	S	S
B/2	S	S
B/3,4,7	S	S
B/6	S	R
B/19B	R	SP

\therefore p21 does not override genetic resistance

lac = reversion.

514.

4/9/49.

96 papillae of H190 kept a week on EMS lac tested as before.
None were lac⁺. None contained Hgt⁺.

Run unsuccessful

4/12/49.

Test 811/x for maintenance of λ , after purification.

1. 811/r6 28 tests all $\lambda+$
2. 811/21 8 tests all $\lambda+$
3. 811/p9 24 tests all $\lambda+$
4. 811/T7 26 tests all $\lambda+$.

\therefore these phages do not displace λ .

[p14 should be tried as it appears to be lysogenic.]

4/11/49

494-1 was Lac+ ... T5^R // Lac- ... T5^S +R

-2 " " " " +R

-4 was indicated as pure S! (probably +S) but check.

On just checks of 3, 4, 9, 10 all R was indicated. Recheck.

N12: Sked out EMS colonies from 4, 5, 6, 7, 8, 12, 13 for further examination.

494:3
Lact: 10^R Lac- 9S 1^R

494:8 Lact: 10^R Lac- 10^S +R

:9 Lact: 10^R Lac- 10^S +R

:10 Lact: 10^S Lac- 4^R 6^S +S!

Most are entirely segregated, e.g. Xyl brush tests:

4 abc - d ±

5 abcd -

6 abc -

7 abcd -

8 acd - b ±

12 abc -

13 abc - d +.

4d and 8b are only hopeful.

retest these.

44.9. 8 recoverable, but
throw out.

Partial analysis of 502 X.

89 in each group.

a)	Xgl-	Lac+	36	43%
		Gal+	35	42%
		Mtl+	2	2.5%
	Xgl+	Lac+	1	1
		Gal+	0	0
		Mtl-	1	1

Lac segregation is ca 40%.

possible interp.

Gal Lac Vi

-	②	①
no c.o.	X-L-	40%
①	X-L+	55
②	X+L-	3+
①.②	X+L+	<<1

Map Mal in Het + normal stocks

4/12/49

~~EMS Mal~~ Mal

-1 58-161 x W677
-2 W478 x W677.

A T(10) B T(B) C T(B)

*Pick colonies randomly to EMS Lac (E pyruvate supply)
Recount from these plates to test segregation.*

Summaries:

	Lact+	Lac-	Σ
① A	14	34	48
C	7	8	15
B	1	7	

Lact+ Lac- Σ

13	38	51
7	7	14
8	26	34

28 71 99

28% +

Plated on EMS Lac

15	11
12	15
10	14
8	10
17	20

28	12	40
29	10	39
16	16	32
31	19	50
16	6	22
30	31	61
13	7	20
33	20	53
16	17	33
27	10	37
28	13	41

B 267 ✓ 161 428 62.4% +

69	40	109
31	20	51
37	21	58

137 81 218 62.8% +

46	67	113
36	70	106

82 137 219 37.4% +

EMSB, plates badly faded, but girls presumed - and - to lac + Gal

EMB for correlation.

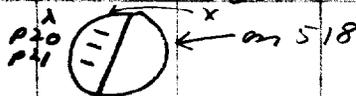
	lac	Gal :	
1C:	30-	29-	1+
	13+	10-	3+
2C	19+	13-	6+
	20-	20-	0+

Gal+ is simply infrequent and may not necessarily be linked directly to lac; maybe corresponding to Mal.

Mal difficult to score $\frac{1}{2}$ theoretical
E B, -

4/12/49.

Test each of the following for λ on W518 and sensitivity to λ , $p20$, $p21$



1. 482-1 *causis* & grossly.
2. 451-1 " λ^R "
3. 451-6 " λ^R " ✓
4. 449-D1 " λ -prototroph"
5. W877 *causis* p14

1. ~~sensitive~~ sensitive to λ . Strongly lysogenic. ~~p20~~ $p20^S$ $p21^S$
2. resistant to λ , $p20^S$ $p21^S$ not lysogenic Lact+
3. ? resistant to λ , $p20^S$ $p21^S$ not lysogenic. Lact+
resistance should be rechecked λ^R . λ^-
4. λ^S $p20^S$ $p21^S$ λ^- Confirmed as λ^- product of a cross.
5. λ^R $p20^S$ $p21^S$ (gross colony). Not tested for λ^+ as it *causis* p14.

Chulson single colonies: 8 all λ^R $p20^S$. Cf. 2 and 3, but here selected \bar{c} p14.

Chulson ~~451-1~~ 451-1 for an infective agent resistant to λ .

Search for λ mutants

519a.

4/12/49.

1. Mix 451-6 as λ^R \in W518 as λ^S . After 24h. co-growth in Y2, streak out to separate, + look for effect of λ -mutant possibly carried by 451-6. After first purification, test K12 / 21 isolated as T6 (20) and mix \in W518 (50) for transmission, test \rightarrow 20 lac- (W518 λ^-) recovered from mixed culture. Each one was λ^S . \therefore resistance is not transmitted extracellularly & is probably genetic. Keep 451-6 as W887

2. Displacement of λ : plate p14 \in K-12; W518. No lysis noted.
Tag: ~~streak out~~ K12 occasional pap. conc. noted. K12 did not show lysis.
Streak out p14 \in K-12. No evident reactions.

P21-Resistants. On the selection plate it was noticed that some of the colonies seemed to be somewhat weak fermenters. Some of these appeared to be T6^S. All K/21 noted were λ^+ . Touch of colony directly from picking needle may be a suitable method of testing λ on a large scale. Recover λ^+ lac- from lytic margins, and test for resistance to λ , p21.

Tests on - from 43 ~~strains~~ gradients tested. As many - as could be conveniently picked for clearly were pooled for each test to ensure a thorough sample. None were p21^R; 3 showed signs of a λ^S component.

Conclusion Resistance to p21 is not infective; only bacterial mutations were found; no λ mutants.

~~Filtrate p20₂ and p21.~~

4/13/49.

100 colonies of Y70 10" UV picked and deep tested for λ on W518.

1 apparent λ^- . Pick, streak out, and retest.

λ^+ λ^R p20³ [check on this].

	p20	λ
520-1	partial chaining	R
Y70	R R	R
W518	S	S
W811	R.	R

520-1 thus shows some deviation from Y70 from which it came.
(partial attenuation of λ ?)

4/21/49. 219 additional tested. All were λ^+ .

W-1: Sal-mutants
and λ disinfection attempts.

4/21/49.

20 plates W-1 on EM13^{Sal} for - mutants. Ca 300/plate = 6000.

4 ^{Sal}-mutants noted. Disregard slow. Purify and check for stability

1
2
3
4

	Sal	Ara	Sal	Lac
W494	+++	+++	-	-
495	+++	+++	-	-
496	+++	+++	-	-
497	+++	+++	-	-

1 papilla noted

stable!

A few doubtful ^{lac} papillae noted in (1) ✓ ^{Sal} ~~lac~~ found. Isolate W902. ^{Sal} ~~lac~~ +

Disinfection: Test individual colonies by picking \bar{c} needle and keeping as a ribbon of W518.

(2) 40 tested from 7 and 20 see treatments.

2 uncertain λ - streak out on Mal EM13 to verify W-1 origin and subculture.

#1 Mal+ , undoubtedly W518, pushed out by streak buds

#2 Pure Mal- . On check was λ - . Recheck individual colonies for λ : All λ^R λ - p20⁵



A23: 420 tested from 7 second run. 22 possible λ - noted. Recover and recheck. Number 3-24

A24: 110 additional tests. 2 possible λ - . Streaks out as 25-26.

4/24/49

A23: Test Isolates 3-24 and check responses.

	MalEMB stability (some Mal+)	/WS18 Occ. λ phage	p20	λ	
3	—	λ —	S	R	
4	—	λ —	RP	↓	
5	—	Occ. λ phage	S		
6	—	λ —	S		
7	—	λ —	S		
8	—	λ —	S		
9	some Mal+	λ —	S		
10	—	λ —	S		
11	—	λ —	S		
12	—	λ +	S		
13	—	λ — + diff.	S		
14	—	λ —	S		
15	—	λ —	S		
16	—	λ —	S		
17	—	λ +	R		
18	—	λ—	R		
19	—	λ —	R		
20	—	λ +	RP		
21	—	λ—	RP		
22	—	λ —	S		
23	—	λ —	S		
24	—	λ —	S		
W-1		λ +	R		R
WS18.		λ —	S		S

λ seems to have reappeared in some cultures.

Note #18, 19 which are p20^R λ —

25	R	R
26	S	R

4/26. Returns:

	p^{20}	λ	$(\lambda)/518$
W-518	S	S	-
W-898	R S	R	-
W-899	R	R	-
W 900	S	R	-
W 901	S	R	-
-25	R	R	-
-26.	S	R	-

cultures OK again

April 24, 1948.

P24. Individual colonies of W898 tested:

All are λ^R , $p20^S$. When cross-bunched with W518, there is some mild apparent ^{decoloration} lysis; no definite plaques or inhibition.

Keep and compare # 18, 19 as $\lambda - p20^R$;
22, 23 as $\lambda - p20^S$;

Recheck individual colonies from Mal EMB for λ . Do not check those already λ^+ . W518.

- 2 4
- 3 6
- 4 7
- 5 8
- 6 9
- 7 10
- 8 11
- 9 13
- 10 14
- 11 15
- 12 16
- 13 17
- 14 18
- 15 19
- 16 20
- 17 21
- 18 22
- 19 23
- 20 24
- 21

no lysis observed.

Note culture which was used as W518 4/25 is apparently unmutated as it tests $p20^R \lambda^R$ on suitably controlled plates. All expts. which this night effort have been thrown out and present records are correct.

- # 2 telomers W898.
- 18 W900
- 19 W901
- 4 W899

c. Check out conjugation of W900 and W901, \pm W518 above, on Mal EMB to determine whether resistance to $p20$ is transmissible.